

REMARKS

This amendment is being filed in response to an Office Action mailed 07/07/2008, in which the Examiner said that claims 4-11, 13,15, 37-40, and 49-52 were pending but rejected. In this amendment, claims 4-7, 13, 37, 38, 49, and 50 are canceled, and claims 8-11 and 14 are amended to overcome reasons for rejection given by the Examiner. Other reasons for rejection are traversed below.

Claims Rejected under 35 USC §112

The Examiner said that claims 4-11 and 13-15 were rejected under 35 USC §112, second paragraph as being indefinite.

Regarding claims 4, 5, 8, 13, and 14, the Examiner said that these claims recite “said system,” for which antecedent basis is not provided. In this amendment, claims 4, 5, and 13 are canceled, and these references in claims 8 and 14 are each changed to “said computer system, for which antecedent basis is provided.

The Examiner said that claim 8 recites “said ordered sequence of alphanumeric values,” which lacks antecedent basis. In this amendment, this phrase is changed to “said ordered sequence of values,” for which antecedent basis is provided.

The Examiner also said that claim 8 recites, “next value...in an unencrypted form...and encrypted with said private cryptographic key. The Examiner then said that one of ordinary skill in the art would not understand how the next value is both “in an unencrypted form” and “encrypted.” The Applicants note that this statement was meant to indicate that the value is sent in both an unencrypted form and in an encrypted form, combined with the value representing the measured usage of the utility product. In this amendment “both” is added for clarification.

The Examiner additionally said that claim 8 recites “said alphanumeric value received as said message follows, within said ordered sequence...a version of said alphanumeric value previously transmitted...” The Examiner further said that this claim is indefinite because one of ordinary skill in the art would not understand what the message is following, the “ordered sequence” or the “version...previously transmitted.” The Applicants believe that this confusion is caused by the phrase “a version of said alphanumeric value previously transferred from said meter.” In this amendment, this phrase is changed to “a value previously transmitted as said alphanumeric from said meter for clarification.

The Applicants note that the problems cited by the Examiner particularly in reference to claim 8 also apply to claim 14. Therefore, the modifications described above as particularly being applied to claim 8 are additionally applied to claim 14.

It is believed that the changes described above overcome the reasons for rejections under 35 USC §112 of the independent claims 4, 5, 8, 13, and 14; and the rejections under 35 USC §112 of the dependent claims 6, 7, 9, 10, and 15 are overcome by these modifications of the independent claims on which the dependent claims depend.

Claims Rejected under 35 USC §103

Regarding claim 4, the Examiner said that this claim was rejected under 35 USC §103(a) as being unpatentable over U.S. Pat. No.6,819,099 to Villicana et al., hereinafter Villicana, in view of U.S. Pat. Appl. No. 20002/0026575 A1 to Wheeler, hereinafter Wheeler. In this amendment, this claim is canceled.

Regarding claims 8 and 9, the Examiner said that these claims were rejected under 35 USC §103(a) as being unpatentable over Villicana/Wheeler, and further in view of U.S. Pat. No.6,078,999 to Johnson.

The Applicants respectfully submit that the teachings of Villicana, Wheeler, and Johnson, taken separately or in combination fail to teach or otherwise anticipate a requirement of claim 8 for a microprocessor in each meter in said plurality of meters to be additionally programmed to generate an ordered sequence of values for use as each said alphanumeric value, and to transmit, on a periodic basis, to said central computer system, a next value from said ordered sequence of values, in both an unencrypted form, and as combined with said value representing said measured usage of said utility product and encrypted with said private cryptographic key, and for said processor within said central computer system to be additionally programmed to receive said unencrypted form of said value in said ordered sequence of values as unencrypted version of said alphanumeric value, to determine whether said alphanumeric value received as said message follows, within said ordered sequence of values, a value previously transmitted as said alphanumeric value from said meter, and to store data derived from said value representing a measured usage of said utility product within said data record including said meter identifier identifying said meter in response to determining that said decrypted message matches said unencrypted version of said message together with determining that said alphanumeric value follows said value previously transmitted as said alphanumeric value from said meter..

This requirement was devised by the Applicants to prevent the surreptitious transmission of data representing a low usage of the utility product from another device, such as a computer, while the actual meter is disabled or otherwise prevented from transmitting data. In this regard, it is understood that a person wanting to perform such a surreptitious action would probably be able to intercept and record a transmission from the meter, but that such a person would not be able encrypt the number, or the number together with other data, since he would not have a key to do so. However, retransmitting such data would not work because alphanumeric value would not follow the value previously transmitted in the sequence, as it would actually be the value previously transmitted. Using a prior transmission would not work either, since the

value would precede, rather than follow, the value of the previous transmission.

Villicana and Wheeler do not mention using values from an ordered sequence. Johnson discusses, in column 11, lines 46-67, the use of a current sequence number when transferring data between the tag and a local interrogator of the POS device. Using the current sequence number prevents the accidental replication of a command or operation that occurs in the presence of noise or another disturbing factor. Typically, the host sends a sequence number to the tag with each command. Johnson additionally discusses the use of a sequence of values in column 16, lines 32-49, and in column 18, lines 29-42. However, in the method of Johnson, these sequence values are part of a process for generating the DES code key, allowing data to be added to, or subtracted from, the data stored within the cryptography electronics of the tag.

Thus, Johnson does not anticipate the use of values from a sequence with such values being transmitted in an unencrypted form and in a form combined with data, such as the usage of a utility product and then encrypted, as required by claim 8. In the Applicants' invention, these steps are particularly important, since they make it impossible to devise a valid entry for data, such as a value representing a low level of usage of the utility product. Recording such a transmission for later use would not result in a valid transmission since the sequence value would be wrong, in that it would not follow the previously transmitted value within the sequence. Furthermore, it would be impossible to correct the sequence number, because then it would not match the value combined with the meter usage data and then encrypted.

For the above reasons, the Applicants respectfully submit that claim 8 is patentable under 35 USC §103(a) over Villicana/Wheeler, and further in view of Johnson.

Since claim 9 merely adds limitations to claim 8, the Applicants respectfully submit that, for reasons described regarding claim 8, claim 9 is patentable under 35 USC §103(a) over Villicana/Wheeler, and further in view of Johnson.

Regarding claims 5, 10, 11, and 13, the Examiner said that these claims were rejected under 35 USC §103(a) as being unpatentable over Villicana/Wheeler in view of U.S. Pat. No.5,343,516 to Callele et al. and further in view of 5,343,516 to Callele et al. and further in view of U.S. Pat. No.5,367,464 to Abumehdi et al. In this amendment, claims 5 and 13 are canceled, and claims 10 and 11 are amended to depend upon claim 8 instead of upon the canceled claim 5.

It is noted that adding the teachings of Callele et al. and Abumehdi et al., to those of Villicana/ Wheeler does not overcome the deficiencies of Villicana/Wheeler in describing the limitations of claim 8, as described above. Since claims 10 and 11, as modified herein, 9 merely add limitations to claim 8, the Applicants respectfully submit that, for reasons described regarding claim 8, claims 10 and 11 are patentable under 35 USC §103(a) over Villicana/Wheeler, and further in view of Callele et al. and Abumehdi et al.

Regarding claims 6 and 7, the Examiner said that these claims were rejected under 35 USC §103(a) as being unpatentable over Villicana/Wheeler in view of Callele et al. In this amendment, these claims are canceled.

Regarding claims 14 and 15, the Examiner said that these claims encompass substantially the same scope as claims 8 and 9, claims 14 and 15 are rejected in substantially the same manner as claims 8 and 9. In this regard, the Applicants note that, while claims 8 and 9 describe a system including a central computer system, a plurality of meters, and a communication network, claims 14 and 15 describe only a central computer system.

The Applicants respectfully submit that the prior art cited by the Examiner in reference to claims 8 and 9 does not describe or anticipate the requirements of claim 14, as amended herein, for the processor within said central computer system is additionally programmed to:

receive an unencrypted form of said alphanumeric value,
determine whether said alphanumeric value received follows, within an ordered sequence of alphanumeric values, a value previously transmitted as said alphanumeric value from a meter identified by said meter identifier within said message, and
store data derived from said value representing a measured usage of said utility product within said data record including said meter identifier identifying said meter in response to determining that said alphanumeric value from said decrypted message matches said unencrypted version of said alphanumeric value together with determining that said alphanumeric value follows said value previously transmitted from said meter.

This requirement was devised by the Applicants to prevent the acceptance, within the central computer system, of a surreptitious transmission of data representing a low usage of the utility product from another device, such as a computer, while the actual meter is disabled or otherwise prevented from transmitting data. In this regard, it is understood that a person wanting to perform such a surreptitious action would probably be able to intercept and record a transmission from the meter, but that such a person would not be able encrypt the number, or the number together with other data, since he would not have a key to do so. However, retransmitting such data would not work because alphanumeric value would not follow the value previously transmitted in the sequence, as it would actually be the value previously transmitted. Using a prior transmission would not work either, since the value would precede, rather than follow, the value of the previous transmission.

Vilicana and Wheeler do not mention using values from an ordered sequence. Johnson discusses, in column 11, lines 46-67, the use of a current sequence number when transferring data between the tag and a local interrogator of the POS device. Using the current sequence number prevents the accidental replication of a command or operation that occurs in the presence of noise or another disturbing factor. Typically, the host sends a sequence number to the tag with each command. Johnson additionally discusses the use of a sequence of values in column 16, lines 32-49, and in

column 18, lines 29-42. However, in the method of Johnson, these sequence values are part of a process for generating the DES code key, allowing data to be added to, or subtracted from, the data stored within the cryptography electronics of the tag.

Thus, Johnson does not anticipate the use of values from a sequence with such values being transmitted in an unencrypted form and in a form combined with data, such as the usage of a utility product and then encrypted, as required by claim 8. In the Applicants' invention, these steps are particularly important, since they make it impossible to devise a valid entry for data, such as a value representing a low level of usage of the utility product. Recording such a transmission for later use would not result in a valid transmission since the sequence value would be wrong, in that it would not follow the previously transmitted value within the sequence. Furthermore, it would be impossible to correct the sequence number, because then it would not match the value combined with the meter usage data and then encrypted.

For the above reasons, the Applicants respectfully submit that claim 14 is patentable under 35 USC §103(a) over Villicana/Wheeler, and further in view of Johnson.

Since claim 15 merely adds limitations to claim 14, the Applicants respectfully submit that, for reasons described regarding claim 14, claim 15 is patentable under 35 USC §103(a) over Villicana/Wheeler, and further in view of Johnson.

Regarding claims 37-40 and 49-52, the Examiner said that these claims were directed to methods and a computer readable medium of the system claims and were rejected accordingly. In this amendment, claims 37 and 38 are canceled.

The Applicants note that that claims 39 and 51 are a method claim and a computer readable medium claim, respectively, of the system claim 14. The Applicants respectfully submit that the prior art cited by the Examiner regarding claim 8 fails to anticipate the requirements of claim 39 and of claim 51 for:

said encrypted message to be received in step a) as a portion of a transmission initiated by said meter, together with said unencrypted form of said alphanumeric value, and

step c) to be followed by following steps l) through m):

l) determining in said central computer system whether said alphanumeric value additionally transmitted in an unencrypted form in step d) follows an alphanumeric value additionally transmitted by said meter in said predetermined sequence of alphanumeric values, and

m) storing said utility usage data transmitted from said meter in step d) in response to a determination in step f) that said alphanumeric value from said message decrypted in step b) matches said unencrypted version of said alphanumeric value together with a determination in step o) that said alphanumeric value additionally transmitted in an unencrypted form in step d) follows an alphanumeric value additionally transmitted by said meter in said predetermined sequence of alphanumeric values.

This requirement was devised by the Applicants to prevent the acceptance, within the central computer system, of a surreptitious transmission of data representing a low usage of the utility product from another device, such as a computer, while the actual meter is disabled or otherwise prevented from transmitting data. In this regard, it is understood that a person wanting to perform such a surreptitious action would probably be able to intercept and record a transmission from the meter, but that such a person would not be able encrypt the number, or the number together with other data, since he would not have a key to do so. However, retransmitting such data would not work because alphanumeric value would not follow the value previously transmitted in the sequence, as it would actually be the value previously transmitted. Using a prior transmission would not work either, since the value would precede, rather than follow, the value of the previous transmission.

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Thus, Johnson does not anticipate the use of values from a sequence with such values being transmitted in an unencrypted form and in a form combined with data, such as the usage of a utility product and then encrypted, as required by claim 8. In the Applicants' invention, these steps are particularly important, since they make it impossible to devise a valid entry for data, such as a value representing a low level of usage of the utility product. Recording such a transmission for later use would not result in a valid transmission since the sequence value would be wrong, in that it would not follow the previously transmitted value within the sequence. Furthermore, it would be impossible to correct the sequence number, because then it would not match the value combined with the meter usage data and then encrypted.

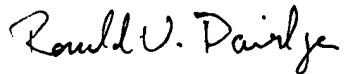
For the above reasons, the Applicants respectfully submit that claims 39 and 51 are patentable under 35 USC §103(a) over Villicana/Wheeler, and further in view of Johnson.

Since claims 40 and 52 merely add limitations to claims 39 and 51, respectively, the Applicants respectfully submit that, for reasons described regarding claims 39 and 51, claim 40 and 52 are patentable under 35 USC §103(a) over Villicana/Wheeler, and further in view of Johnson

Conclusions

The Applicants respectfully submit that the application, including claims 8-10, 14, 15, 39, 40, 51, and 52 is now in condition for allowance, and that action is respectfully requested, with reconsideration and reversal of all grounds given for objections and rejections.

Respectfully submitted.



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